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ISD News & Views
Information Services Division
A Newsletter Dedicated To Information Technology In The State Of Montana

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May 1996
Volume 13 No. 11

Emerging Technologies Spotlight

Electronic Commerce Has Great Impact on the Enterprise

Electronic Commerce (EC) refers to a broad array of technologies, processes, and practices which automate business transactions through largely paperless mechanisms. These technologies include electronic data interchange (EDI), electronic messaging, electronic mail (E-mail), electronic bulletin boards, electronic funds transfer (EFT), electronic benefits transfer (EBT), electronic forms, bar coding, point of sale systems, value-added networks (VANs), and electronic catalogs.

This article addresses three of the EC technologies which are likely to have the greatest impact in Montana state government—EDI, EFT, and EBT.

EDI

The technology most often associated with electronic commerce is EDI. *EDI* is the computer-to-computer exchange of business documents in a standard format, or in more basic terms, the flow of information between organizations without human intervention. The goal in EDI is not to simply electronically transmit data between companies. It is to provide the link between business applications of the sender and receiver

What's Inside

Enterprise Wide News
Electronic Commerce Has Great Impact on the Enterprise 1
Calendar of Events 2
GIS Seminar 2
SummitNet Logical Design 4
Telecomm. Act Passed/Congress . 5
Voice News
CommNet Cellular/Service 5
Mainframe News
New Rel. of VPS, VMCF Installed .. 6
DATECVT Modified/Year 2000 7
Enterprise Migrates/CICS/ESA 4.1. 7
Bypass Label Processing Utility .. 8
Magnetic Tape Enhancements 9
ISD Utilities Menu Changes 9
Meeting News
ITAC/Enterprise Budget Proposals 9
ITMG/Discussions Continue 11
TechTalk
"Round-Tripping" in WP61Win .. 11
WordPerfect 6.1—A Sorted Story 12
Adding Buttons in Approach 13
Corel/Backgrounds&Objects&Text 14
Win Freebies, PicAlbum/SCInvoke 14
Term Contract News
Term Contract Status 15
Training News
New TCT Video Courses 16
Training Calendar 18
ISD Class Enrollment Application 19
Notes
Suggestions 17
Editor's Notes 20

Calendar of Events

May 1:
- ITMG, 8:30-10:30, Metcalf 111

May 2:
- Public Safety Communications, 1:00-3:30

May 3:
- MOPUG, 1:00-4:00, Mitchell 13A & 13B

May 7:
- ITAC, 8:30-11:30, Metcalf 111

May 15:
- ISPG, 1:00-3:00, Montana State Library Conference Room 208

May 17:
- Governor's Blue Ribbon Task Force, 10:00-4:00, Capitol 104
- GIS Seminar, 3:00-5:00, Montana State Library Conference Room 208

May 21:
- SEC, 9:30-11:30, Mitchell 160 or DPHHS Auditorium (METNET)

May 27:
- Memorial Day Holiday

June 5:
- ITMG, 8:30-10:30, Metcalf 111

June 6:
- Public Safety Communications, 1:00-3:30

June 7:
- MOPUG, 1:00-4:00, Mitchell 13A & 13B

June 18:
- SEC, 9:30-11:30, Mitchell 160 or DPHHS Auditorium (METNET)

June 19:
- ISPG, 1:00-3:00, Montana State Library Conference Room 208

June 23-28:
- GPS/GIS '96 Conference, Yellowstone National Park and Billings

Additional IT Meeting Information

A *"Directory of Information Technology Meetings"* which contains additional information Technology meeting information may be obtained from the Value Added Server (GUEST\ITACINFO\MEETING.W60 or GUEST\ITMGINFO\MEETING.W60), the State Bulletin Board System (Agency / Administration / Information Services / Files / Advisory Groups / MEETING.ZIP) or by calling ISD (444-2700)."

such that no human intervention is required at the receiver end.

An effective electronic commerce system is based on trading partners using the same standard data format. There are currently two widely accepted EDI data format standards. The ASC X12 committee of the American National Standards Institute (ANSI) establishes what documents can be sent via EDI and how each document will be structured. This standard is the most widely used EDI standard in the United States today.

The second major EDI standard is the U.N. sponsored international standard which is called EDIFACT. This is the standard most widely used outside the United States. There are currently efforts underway to merge the two standards within the next few years.

How EDI Works

Most existing applications are not designed to accept or generate data in EDI standard format. Therefore, both the sender and receiver of EDI data must have computer programs that act as a bridge between their application and the EDI data stream that is sent to their trading partner. Typically, there are two programs in this bridge—the application link and the EDI translator. The application link's main function is to collect, from key entry and internal files, all of the information needed to generate the EDI transaction. In most implementations, the application link is developed in-house.

From the information that the application link gathers, it generates a fixed-length file which is passed as input to the EDI translator. The EDI translator uses the fixed length file to generate the EDI standard file and it also assures that all the standard syntax rules have been met before it is transmitted. Typically, because of the complexity of this code, the EDI translator program is purchased.

The EDI standard file is then transmitted via telephone lines, either directly from sender to receiver or, more commonly, via a communications intermediary called a value-added network (VAN). Estimates are that 70% of all EDI traffic flows thru VANs. Through the protocol and line speed matching that a VAN offers, an organization can trade electronically with any number of partners without having to deal with the disparate communications infrastructures of each partner. Each customer of the VAN is assigned a mailbox into which it deposits all the data and control reports destined for that partner. As part of their standard services, VANs also offer security, control, and backup and recovery services.

On the receiving side, there are also EDI translation and application link programs. The EDI translator verifies that the incoming data stream is complete and adheres to standards, and secondly, it moves (or "maps") the information from EDI standard format back to fixed length file format. This file is then passed as input to the application link program which performs the editing and validation functions that, in a manual process would be performed by people (e.g. verifying that all the required pieces of information have been received). Finally, the data is passed along to the application program.

GIS Seminar

May 17 - Larry Swanson, Center for the Rocky Mountain West, *Placing Economic Data into a Geographic Context.* GIS is being increasingly looked to as a tool in organizing and displaying information of many types; including economic and social data. Dr. Swanson will discuss a framework for identifying and evaluating regional economies referred to as the Regional Economies Assessment Database, or READ, and the READ system's use of GIS tools and applications. This seminar will be held in the Montana State Library Conference Room 208 from 3:00-5:00. For more information, contact Kris Larson (444-5691 or via the Internet at klarson@nris.msl.mt.gov).

Federal Government Electronic Commerce Prototype

The Federal Procurement Streamlining Act of 1994 established a target date of January 1, 1997, for a federal government-wide implementation of EDI for appropriate federal purchases. While the 1997 date is not likely to be met government-wide, the initiative is expected to have a profound effect on the use of EDI. Most government suppliers (> 300,000 suppliers) will be required to implement some form of EDI.

In a few years, this very aggressive EC policy of the federal government will mandate that states use many of the EC technologies, particularly EDI. State and local governments can be positively impacted by this initiative for several reasons:

- the architecture defined for the federal program provides a good working model for state/local governments to begin their planning;
- many of the trading partners that sell to the federal government also sell to state/local governments. Therefore, state/local entities can leverage the results of this initiative in their own procurement processes.

The Gartner Group believes that the federal government model of EDI will prevail in other governmental implementations.

Electronic Procurement

Among the EC technologies, some studies indicate that the use of EDI in the procurement area has the potential for the most impact on state and local governments. In the following, fully integrated EC scenario, each of the electronic documents is transmitted using the appropriate EDI transaction set.

A government agency releases an electronic RFP. The agency evaluates the electronically transmitted vendor proposals and selects the winning bid. An electronic purchase order is forwarded through the VAN to the successful vendor, which in turn sends an electronic invoice to the government agency. Payment for vendor goods and services can be made through EFT and acknowledgment of the transfer can be sent to both parties via financial EDI, making it a paperless transaction from start to finish.

The primary drivers of electronic procurement solutions are needs to: streamline the procurement process (it's too slow and costly); reduce or eliminate the flood of paperwork associated with purchasing activities; and improving access to data by storing it electronically where it is more accessible to those who need to look at it.

Electronic Funds Transfer (EFT) and Financial EDI (FEDI)

EFT refers to bank-to-bank electronic payment instructions, or more succinctly, EDI between banks. FEDI refers to the exchange of business information between a firm and its bank. EFT and FEDI are both subsets of EDI. The distinguishing feature that separates EFT and FEDI from other types of EDI is the involvement of a financial intermediary such as a bank. The role of the financial intermediaries is to affect the funds transfer from one party to another.

Although an organization can do EFT without FEDI, or FEDI without EFT, the maximum benefit to be gained occurs only when the two are used together. The EFT payment alternatives used in the U.S. for moving cash from one bank to another include: Federal Reserve wire transfers (FedWire); Automated clearinghouse (ACH) payments; and The Clearing House Interbank Payment System (CHIPS).

Electronic Benefits Transfer (EBT)

EBT allows governments to transfer benefits from welfare programs over an electronic network without ever having to write a check or generate extensive paperwork. The process behind EBT is heavily based on EFT technology.

A benefits recipient receives a magnetic strip card or smart card from a government program. The benefits program electronically transfers funds to the EBT account on a monthly or periodic basis. The welfare recipient is then able to purchase food or receive cash benefits thru ATMs and point of sale card readers.

The primary benefits of EBT are cost savings (by eliminating the printing, distributing, and mailing of documents associated with benefits transfer); reduction of paperwork; reduction of welfare fraud; and it provides a more efficient delivery of benefits for recipients. EBT also allows for real-time termination of benefits; eliminates the processing of food stamps and vouchers; and eliminates the possibility of benefit coupons being stolen.

Uses of EC technologies in State of Montana Government

Current uses of EC in State of Montana include:

- Department of Revenue accepts electronic tax filings using EDI
- Department of Labor & Industry and State Fund are using EDI for worker's compensation claim filings
- Department of Public Health & Human Services is using EBT for issuance of Food Stamp and Medicaid benefits

Potential EC uses include: Purchase Orders, RFQs (Request for Quotations), bids, invoices, unemployment insurance, election results, UCC filings, vehicle titles from dealers, commercial vehicle permits, withholding and motor fuel tax reporting/payment, loans, transcripts, health plan enrollments, regulatory reporting, and telephone bills.

Dan Sidor
Computing Policy & Development

SUMMITNET

SummitNet Logical Design Adopted By SEC

The SummitNet Executive Council has agreed to a final logical network design for SummitNet. The new design is satisfactory to state agencies, the University system and local governments.

The model adopted is based on a shared backbone using ISD's "Class B" IP addressing space and autonomous system number. The University System would use their Class "C" addressing space within each region serving educational needs. (Each device connected to SummitNet will require one of these IP addresses.)

"The SummitNet Executive Council has agreed to a final logical network design for SummitNet. The new design is satisfactory to state agencies, the University system and local governments."

The state will be divided into ten different areas as shown on the SummitNet Area Map in Figure 2. This model supports the predominant needs of state agencies and education, and also provides an opportunity to attach separate autonomous domains to meet the needs of individual users and applications.

The model uses aggregation routers in each region. This provides two main advantages: 1) it will serve to aggregate the numerous routers behind it (greatly reducing the network broadcasts) and 2) it will group participants, enabling policy decisions to be made corporately, rather than individually (in the same sense, areas of responsibility or authority can be defined).

This model also minimizes the need to change address assignments as the network evolves. The University system and ISD will be able to develop routing and IP addressing plans that allow for the transition of the backbone network to higher bandwidth services such as ATM (Asynchronous Transfer Mode) without affecting individual sites within each area.

Questions about SummitNet may be directed to Carl Hotvedt (444-1780) from the Telecommunications Operations Bureau.

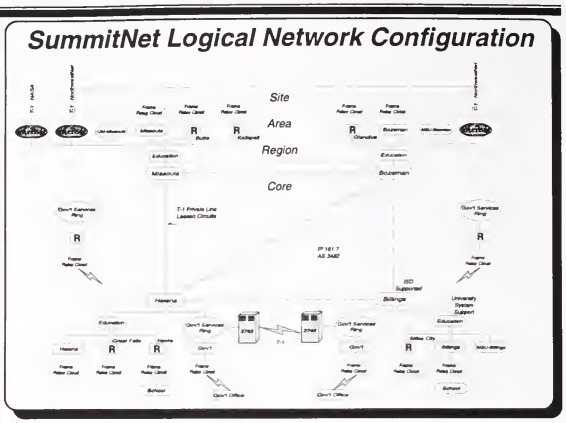


Figure 1: SummitNet Logical Network Configuration

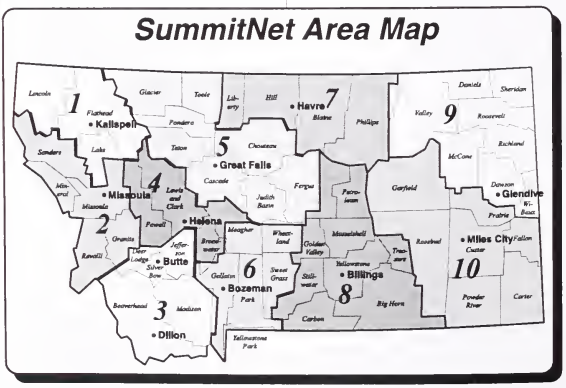


Figure 2: SummitNet Area Map

Telecommunications Act of 1996 Passed by Congress

For the past three years, President Clinton and Vice President Gore have worked for telecommunications reform that stimulates private investment, promotes competition, protects diversity of viewpoints and voices among the media, provides families with technologies to help them control the kinds of television programs that come into their homes, and strengthens and improves universal service so that all Americans can have access to the benefits of the information superhighway.

On February 1, 1996, after months of negotiations and political wrangling, Congress overwhelmingly passed the "Telecommunications Act of 1996". The Act is the first comprehensive rewrite of the "Communications Act of 1934", and dramatically changes the ground rules for competition and regulation in virtually all sectors of the communications industry, from local and long-distance telephone services, to cable television, broadcasting and equipment manufacturing. The Act doesn't completely replace the existing Communications Act. It deletes some parts, augments others, and adds new material. The law does supersede at least two major court decrees: the Modifications of Final Judgment (MFJ), which broke up the Bell System and imposed restrictions on the Bell Operating Companies (BOCs); and the GTE consent decree which barred GTE's operating companies from providing long distance services. President Clinton signed the Act on February 8, 1996, and its provisions become effective immediately.

For decades, communications policy—including ownership and service restrictions that maintained protected monopolies at both the state and federal levels—has been set largely by the Federal Communications Commission (FCC), state public service commissions (PSCs), and the federal courts' enforcement of the 1984 antitrust consent decree that dismantled the Bell System. Major strides have been made, particularly in relaxing federal regulation and in ensuring fair competition in the long-distance telephone market, but the ambiguity inherent in enforcing a 62-year old statute has led to legal uncertainty and conflicting interpretations. With the Act, Congress has reasserted primacy in setting U.S. communications policy, and has set a course that clearly adopts competition as the basic charter for all telecommunications markets.

"On February 1, 1996, after months of negotiations and political wrangling, Congress overwhelmingly passed the 'Telecommunications Act of 1996'. The Act is the first comprehensive rewrite of the 'Communications Act of 1934', and dramatically changes the ground rules for competition and regulation in virtually all sectors of the communications industry, from local and long-distance telephone services, to cable television, broadcasting and equipment manufacturing."

In each of five major areas—telephone services, telecommunications equipment manufacturing, cable television, radio and television broadcasting, and Internet and online computer services—cross-market entry barriers have been eliminated, concentration and merger rules relaxed, and massive new implementation obligations placed on the FCC and state regulators. In some areas, particularly television violence and "indecent" on-line communications, Congress acted more to promote its current views of appropriate social and moral behavior than to unleash competitive market forces.

For more information on the Telecommunications Act of 1996, please call Jim White (444-2516) of Telecommunications Policy & Development.

CommNet Cellular Improves Service for the Enterprise

This article and the articles you will be seeing in the months to come are meant to provide information regarding the term contract the State of Montana has entered into with CommNet Cellular. Also, the articles will provide updates, hints and suggestions on how to get the most

from your cell phone service.

It has been several months since CommNet Cellular has made some changes to improve service for the State. Among those changes is the addition of a new Senior Account Manager for the State of Montana—Kati Ogle.

Kati's primary responsibilities as Senior Account Manager are to distribute new information, handle new activations and equipment, provide cellular training, and customer assistance. Kati can be reached at 406/431-2010 or via the Internet at **katio@initco.net**.

In addition, CommNet Cellular has opened a new retail outlet at 2100 N. Montana Avenue, and has added a local Customer Assistance Representative to their staff. Her name is Shelley Zeleniak, and she can be reached at 406/443-4200. Shelley's primary function with regard to the State of Montana is to provide customer assistance in areas such as billing.

CommNet Cellular's 9-State Network

CommNet Cellular's 9-State Network includes most of Colorado, North Dakota, Idaho, South Dakota, Iowa, Utah, Montana, Wyoming, and New Mexico

Follow Me Roaming (FMR)

When placing or receiving calls from outside CommNet's 9-State Network, you must activate Follow Me Roaming (FMR).

To activate FMR:

- At your destination outside the 9-State Network, from your cellular phone, dial *18+SND
- Wait for the confirmation (voice or tone), then press the END key

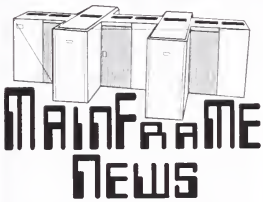
To de-activate FMR:

- From your cellular phone, dial *19+SND
- Wait for the confirmation (voice or tone), then press the END key
- If you forget to de-activate FMR before returning home, dial: *73+SND

Did You Know?

- To check the battery level on your Motorola cellular phone, press the FCN key and then 4GHI.
- Fone Facts: Two out of every three new phone numbers are activated by the cellular industry!

If you have questions, please don't hesitate to call on the CommNet folks or Les Smith (444-1203) from Voice Operations.



New Release of VPS, VMCF, & VPS/TCPIP Installed

VPS and VMCF Put into Production

A new release (Release 6.2) of VPS (VTAM Printer Support) and VMCF (VPS Monitor and Control Facility) was installed and put into production on April 13, 1996.

Here is just a quick overview of what function VPS provides. VPS provides the ability to route JES spooled (mainframe output) to any VTAM LU-0 (NON-SNA), LU-1 (SNA/SCS) or LU-3 (SNA/DSC) device. This includes all local and remote models of the 3270-family as well as any other printer that attaches to 3x72 and 3x74 control units. Some examples include HP LASER printers, XEROX laser printers, IBM 5210 letter quality printers, IBM 4245 high-speed printers and many, many more.

The capability to print output that requires use of FCB images (Forms Control) is provided in VPS as well as the ability to control (stop, start, reposition, prioritization of print, etc.) the printer using VMCF.

This new release provides the following new functions:

- This release is made up of a base for installation of various other VPS products (VPS/TCPIP, VPS/PCL, VPS/PC, etc.).
- VPSPRINT can now be invoked under ISPF 'U' - Utilities panel. VPSPRINT can be used to create a sysout dataset on the JES spool from any non-VSAM dataset. VPSPRINT reads the specified input dataset and writes records to the sysout dataset according to the parameters specified on the VPSPRINT panel.

Installation of VPS/TCPIP

VPS/TCPIP (Release 6.2) was also installed and put into production on April 13, 1996.

VPS/TCPIP allows sending print datasets from the JES spool on MVS (mainframe) to TCP/IP devices. All VPS/TCPIP printers can be displayed and controlled using VMCF as well.

There is the capability to create HPL commands to be used for output for HP Laser printers requiring special output format. (i.e. lines/inch lines/page, chars/inch, portrait, landscape, legal, etc.)

VPS/TCPIP can accommodate LPR/LPD protocol as well as TCP/IP Direct Sockets Connection.

For more information, contact Tricia O'Connor (444-2906) from Operating System Support.

Mainframe Date Conversion Subroutine Modified for the Year 2000

Many mainframe applications use a date conversion subroutine known as DATECVT. It is popular because of the extremely wide range of date formats it will convert. We have recently made some additions that should help correct date calculations that involve dates that cross the year 2000. These changes are in effect for batch programs as of March 27, 1996. They should be effective for IDMS and CICS within the next couple of weeks.

The first modification involves the function that retrieves the current date. Until now, the century was **forced to be "19"**. This has been changed so the century will be obtained from MVS, and will always be correct.

The second modification provides the ability to determine what century (18, 19, 20) to use. This is based on the current date and whether the date should be in the past or in the future when converting a two-digit year to a four-digit year. This feature can be used by changing the version number (currently 1A) to either "1F" (Future) or "1P" (Past). Version "1A" will continue to work as it has in the past.

Note: The new features only work during a date **conversion**—namely Function Code 0. They are **NOT** valid for Function Codes 1 through 8. Within Function Code 0, they are only valid for Format1 Codes containing a two-digit year (0, 1, 10, 11, 20, 21, 40, and 50) and Format2 Codes containing a four-digit year (5, 6, 12, 13, 22, 23, 30, 31, 32, 33, and 55). These are format codes used to change a two-digit year (03/27/96) to a four-digit year (03/27/1996).

"**1P**" is used if the date being converted is less than the current date. For example, if the current date is 03/27/96 and you convert 10/05/50 using "1P" the result will be 10/05/1950. If converting 03/27/99 using "1P" the result is 03/27/1899, not 03/27/1999. The "P" states the date returned is before the current date.

"**1F**" is used if the date being converted is greater than the current date. For example, if the current date is 03/27/96 and you convert 10/05/50 using "1F" the result will be 10/05/2050, not 10/05/1950. The "F" states the date returned will be after the current date. When converting 03/27/99 the date being returned is 03/27/1999.

All versions of the date convert routine (1A, 1F, 1P) will return the current century if the date being converted is equal to the current date.

Complete documentation for DATECVT is found on ISD's Value Added Server under GUEST\COBOL.DOC\DATECVT. Access to the Value Added Server varies between agencies. If you have trouble finding this document, contact your local network administrator.

One final note: Several date conversion routines are in use. DATECVT is the only one supported by ISD.

If you have any questions about DATECVT, please contact Buzzy Buswell (444-2881) from Operating System Support.

CICS CORNER

The Enterprise Beginning to Migrate to CICS/ESA Version 4.1

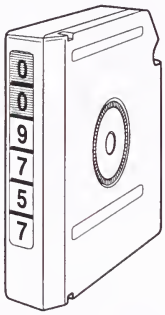
Hang on to your hats folks... CICS is changing again. IBM has announced that it will no longer support CICS/MVS Version 2 as of December 31, 1996. Does this mean that CICS is going away and we can all go home to pursue other forms of entertainment? Of course not! We are going to begin migrating to CICS/ESA Version 4.1 this summer. This new CICS has been totally redesigned to take advantage of the ESA operating system and will provide many new features and capabilities that will be detailed in future articles in this space. For now, I will just point out some of the major changes.

First and foremost as it pertains to applications programming is the removal of support for the old macro level standard. Only those programs adhering to the EXEC CICS command level standard will run in CICS/ESA. Although we don't have that many macro level programs left, they will have to be converted to command level or replaced by newer code as part of this migration. Does this concern you? Have you been writing exclusively in command level for years and years? Well, guess what? There are changes in store for you too! If for some reason you included things like EXEC CICS ADDRESS CSA or TCA in your program, you will have to change these

programs to use other means. These commands are no longer allowed. There are other programming techniques that will need to be reviewed as well.

Now for the good news. The benefit of removing macro level programs and addressability to the CSA and TCA means that CICS can take advantage of storage protection features available in MVS/ESA and on our particular processor. CICS has become much more resistant to storage violations. Transactions can be isolated to prevent them from overlaying other applications storage. The Application Programming Interface has been greatly expanded. It is now possible to LINK to a program running in another CICS on another processor, even CICS for OS/2, Windows, or AIX. Batch programs (yes, I said batch programs) can link to CICS programs to provide greater integration of batch and online processes. There is a new Front End Programming Interface, or FEPI, that allows an application to interface at the 3270 screen level with other applications. This could be used to gather data from several different applications, and present a single result screen to the end user. The C programming language is now supported. Programs and mapsets can be automatically installed... no more APCT abends!

These are just a few changes that are coming with CICS/ESA. The time schedule for conversion has yet to be determined. I have a test region up and running right now. Once we complete our learning process on how to customize and control this new system, it will be made available for application testing. There is a utility program, DFHMSCAN, which can scan load libraries looking for macro level programs and the ADDRESS CSA and TCA commands. This may also provide us with the opportunity to clean up a lot of old unused modules from CICS.TESTLIB and CICS.USERLIB. I will use this space in future articles to go into more depth on one or two new features of the CICS/ESA. If you have any questions about what you can do in the mean time to get ready for this conversion, please call Donald Grinsell (444-2983) from Systems Development Support.



Bypass Label Processing

New Utility is Now Available

As of May 13, 1996, a new utility will be available which will allow customers to use bypass label processing (BLP) when downloading information from an external tape/cartridge. BLP bypasses the processing and interpretation of the internal labels on the tape. BLP jobs are currently being handled exclusively by the Computer Operations Bureau.

The new BLP utility will provide the customer the ability to download PDS files from an external tape to a TEMPSTOR dataset. The customer will then be free to access the data in their own TEMPSTOR datasets which will have ACF2 safeguards in place. Keep in mind, though, that TEMPSTOR datasets are limited to 500 tracks and will be archived from TEMPSTOR in seven days. They can be restored for up to 30 days thereafter.

This utility is accessed via ISPF through the Utilities panel (=U). From the Utilities panel, select the "T" parameter to access the new Tape Jobs menu (see accompanying article entitled *"ISD Utilities Menu Changes"* on page 9). From there, select the "B" parameter to access the BLP introduction panel. The introduction panel will prompt the customer to enter a "1" to produce a printout of the internal labels in output class 8 or "2" to download the data to TEMPSTOR.

Selection "1" will start a job that produces a listing of a report showing a scan of the internal labels. This allows the customer to determine the file sequence number, record length, etc. The customer will be asked for the volser from the external label of the tape and given an opportunity to modify the JOB card for the JCL which is about to be submitted. The retrieved information from the label scan will be needed for the job which is started in selection "2".

Once the job from selection "1" has finished, return to the BLP introduction panel and select "2". Selection "2" will start the job which downloads the data to a TEMPSTOR dataset. The customer will be asked to supply the information obtained in the scan job as well as other information pertaining to the external tape. A unique name will have to be supplied for the TEMPSTOR dataset. Remember that any name chosen for the dataset must be allowed within the confines of the customer's ACF2 security restrictions.

This utility is intended only to work on external tapes. Also, non-PDS files on the external tapes will not be readable by the Syncsort copy routine being used. In those instances, contact Diane Haun (444-3336) from Security, Methods & Media Management for instructions.

The customer will still need to check-in their external tapes at the I/O

window in the computer area, next to the mailboxes. An alpha character volser will be required to avoid conflicts with the numeric numbering system of the internal tapes. This is the volser that must be specified on the panel mentioned above when selection "1" has been chosen from the introduction panel.

If you have any questions or comments regarding this utility, please contact either Diane Haun, or Bill Ramsay (444-2902) from Operating System Support.

Coming Soon...

Magnetic Tape Enhancements Preview

ISD is in the process of enhancing magnetic tape processing capabilities. Soon to be installed will be IBM 3490-E drives. By incorporating a 36-track thin film read/write head, the storage capacity of a single cartridge will double. With the 3490-E drives a new "extended" cartridge can be utilized which will even further increase the storage capacity of a single cartridge allowing more files to be stored on one cartridge, reducing tape storage costs.

The 3490-E drives differ mainly in how the data is written to the cartridge. Data is written in one direction on one edge of the tape medium and then back towards the beginning on the other half of the medium. This effectively doubles the capacity of the tape and eliminates rewinding time on full cartridges. Plus, the extended cartridges add an additional 300 feet of recording medium.

Implementation of the new drives will occur within the next few months. The actual date will be announced with sufficient time to plan changes. While jobs which create new tapes after the upgrade will not have to be changed, jobs which modify files onto existing tapes may require a minor JCL change. Also, reading the old formatted tapes on the new drives will not require a JCL change. Two 3490 drives will be retained for writing external cartridges in the non-E format. More information will be published as it becomes available. If you have any questions, please call Bill Ramsay (444-2902) from Operating System Support.

Now Hear This!

ISD Utilities Menu Changes

As of May 13, 1996, all of the utilities relating to tape processing will be found on a sub-panel of the current ISD Utilities Panel (=U). The utilities affected are the interactive TMS utility (=U.U), the tapelist utility (=U.T), and the external red cartridge generator (=U.R). These utilities, and the new BLP utility, will be accessed by entering a "T" from the ISD Utilities menu. From the Tape Utilities menu, all utilities will have the same option letter as before. In the future, any new tape related utility will be added to this new panel. If you have questions, call Bill Ramsay (444-2902) from Operating System Support.

ITAC Concentrates on Enterprise Budget Proposals

The Information Technology Advisory Council (ITAC) met on April 9 to hear task force reports and begin the process of prioritizing IT budget proposals for the next legislative session.

GIS Task Force

Mike Randall, Department of Transportation, task force chair, presented the task force's preliminary report. A final report will be available soon. Three of their recommendations are working their way through the enterprise budget process. They are:

1) establishing a statewide cadastral (property boundary) database;
2) hiring a metadata (data about data) coordinator to facilitate data sharing within and between state agencies and local and regional governments; and
3) providing enterprise coordination and technical support for state GIS.

Coordination Task Force

Mary Bryson, Legislative Audit Division, chair of the task force, presented a "Minimum Level of Technology" recommendation to the Council. The four parts of the recommendation and their status are:

1) . . . that the State adopt as a target platform for desktop LAN workstations, the following preferred minimum technology

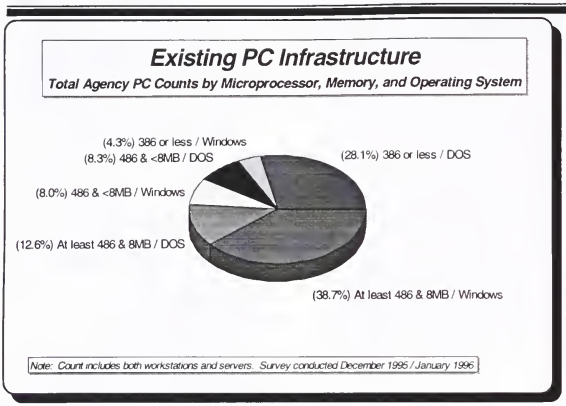

Existing PC Infrastructure
Total Agency PC Counts by Microprocessor, Memory, and Operating System
(4.3%) 386 or less / Windows
(8.3%) 486 & <8MB / DOS
(28.1%) 386 or less / DOS
(8.0%) 486 & <8MB / Windows
(12.6%) At least 486 & 8MB / DOS
(38.7%) At least 486 & 8MB / Windows
Note: Count includes both workstations and servers. Survey conducted December 1995 / January 1996

Figure 3: Existing PC Infrastructure within the Enterprise

level:

- 100MHz Pentium PC
- 16MB of memory
- 1GB hard drive
- 15" SVGA monitor
- At least one 4X CD-ROM drive in each workgroup

Motion to adopt this recommendation carried.

2) . . . that the State implement, via a single EPP proposal, an enterprise-wide plan for a hardware upgrade of all PCs currently below the preferred minimum level hardware and a software upgrade of all PCs to Windows 95. This plan could be accomplished via purchase, lease, or a comprehensive asset management plan.

Motion to adopt this recommendation conceptually with details to follow at the May ITAC meeting carried.

3) . . . that State agencies adopt a life cycle approach to managing IT assets. This approach includes identifying regular replacement schedules for equipment and incorporating replacement costs as an ongoing item in budgets.

Motion to adopt this recommendation carried.

4) . . . that ISD be available as an agency resource during Legislative sessions to actively lobby in support of technology requests deemed essential to enterprise participation. Likewise, ITAC members should be available to lobby on behalf of ISD requests that are important to the enterprise.

Motion to adopt this recommendation carried.

Please see the chart in Figure 3 which shows the existing PC Infrastructure within the state enterprise. Total PC counts (including workstations and servers) by microprocessor, memory, and operating system are shown.

Enterprise Budget Proposals

Tony Herbert, ISD Administrator, reviewed 14 proposed items for the Council's prioritization. The top five vote getters are: Enterprise E-Mail, Enterprise Database Support, Statewide Geographic Information System (GIS) Cadastral Database, Enterprise Hardware/Software Management and Internet Services. Two proposals, Year 2000 Programming and Agency PC Leases were dropped from further consideration. Contact your agency's ITAC representative for more information.

In other business

A summary of the LAN Services RFI was distributed and discussed. This Request for Information (RFI) is the result of an ITAC decision to look into the potential feasibility of acquiring our LAN Services from a private vendor. The RFI was issued in January and ISD has received five responses. The group will further review the summary documentation and there will be further discussion in May.

The group also received information from Paul Rylander, Chief of the ISD Computer Operations Bureau, on Mainframe Rate Unbundling. The expenses currently 'bundled' into the mainframe processing rates include some network expenses, data systems support and strategic planning. An 'unbundling' proposal will go forward through the budget process.

Full minutes of the meeting are available on the Value Added Server (GUEST\ITACINFO), the State Bulletin Board System (Agency / Administration / Information Services / Files / Advisory Groups) or by calling ISD (444-2700).

New TCT Video Courses

ISD has two new additions to its TCT Video Library. They are *Advancements in LAN Technology* and *WAN Developments and the Internet.* Another one, which will be available soon is *Cisco Router Configuration.* For more information, please see the article entitled *"New TCT Video Courses Available from ISD"* on page 16.

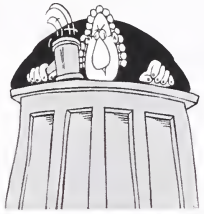
ITMG Meets—Discussions Continue

The Information Technology Managers Group (ITMG) had its last meeting on April 3, 1996. During the meeting the Enterprise Software Subcommittee and the Operating Systems and E-Mail Subcommittee reported on the status of their efforts.

The Enterprise Software Subcommittee is working on a software metering recommendation, and the Operating Systems Subcommittee is working on Windows 95 implementation issues as well as a recommendation for a new enterprise E-mail system. The subcommittee has further divided into three groups to research E-mail issues. The groups are: Features and Functions, Infrastructure, and End-User Client. The subcommittee hopes to have a recommendation in September.

A new subcommittee is now dealing with enterprise imaging standards. Contact Brett Boutin (444-0515) of Computing Policy & Development for more information on imaging.

Complete minutes of the meeting are available on the Value Added Server (GUEST\ITMGINFO), the State Bulletin Board System (Agency / Administration / Information Services / Files / Advisory Groups) or by calling ISD (444-2700). ■



GUILTY!

"Round-Tripping" in WordPerfect 6.1 for Windows

"Yes, your Honor, I did retrieve a WordPerfect 5.1 for DOS file into WordPerfect 6.1 for Windows. And yes, I did save it back into the 5.1 format... and... I do remember pulling it into WordPerfect 6.1 again to make necessary changes. OK, I probably did save it back into WordPerfect 5.1 format... but..."

"Guilty!" the judge proclaimed as the gavel went thump, "of Round-Tripping!"

What exactly is "Round-Tripping"? It is a term coined by the WordPerfect Corporation to describe converting a file from one format to another file format several times. In our word processing arena, files can be retrieved into the powerful WordPerfect for Windows 6.1 platform, worked on, saved back to the DOS environment, and usually retrieved back into the WordPerfect for Windows software package. Once this "loop" has occurred several times, the files have the potential of becoming corrupt.

"What exactly is 'Round-Tripping'? It is a term coined by the WordPerfect Corporation to describe converting a file from one format to another file format several times. ... Once this "loop" has occurred several times, the files have the potential of becoming corrupt."

While companies/agencies were migrating to the Windows environment, the useful "Save as" feature of WordPerfect 6.1 for Windows was used frequently and worked well for those that needed document exchange capability.

So what is the solution? WordPerfect does not plan to implement a "fix" for this problem as it is considered "user error". They put in the conversion utilities for a short one-time conversion from one application to another. The State's strategic direction is to have all Government agencies using Windows products. In the interim, WordPerfect Corporation suggests users develop files in WordPerfect 6.1 and save them into a 6.1 subdirectory. When necessary, they should also save a copy of the file into a 5.1 subdirectory. (This is only necessary for shared files between Windows and DOS agencies.) Then, if changes need to be made, make all changes in the 6.1 file and re-save it in both formats. This approach keeps all similar file formats in the same place.

Some agencies have implemented a network default setting in WordPerfect which will automatically save all files back to the WordPerfect 5.1 format. (Or, perhaps, a user has changed his/her personal default to this setting.) This default setting should be turned off to alleviate any possible chance of document corruption.

If you have any questions on "Round-Tripping" or any other WordPerfect function, please call or ZIP! Sue Skuletich (444-1392) of End User Systems Support. ■

WordPerfect 6.1—A Sorted Story

The sort feature in WordPerfect 6.1 is a tool to use if there is a need for text to be arranged in alphabetical or numeric order.

An example of a simple sort is one where there are lines of text each beginning with a numeric value. If it is desirable to arrange the lines in numeric order you would select **Tools** from the menu, then **Sort** and a defined sort of **First word in a line**. Select **Sort By Line** and make sure the **Sort Type** is **Numeric**. Specify whether an **Ascending** or **Descending** order is wanted. Finally click **OK** and **Sort**. This same method with a sort type of **Alpha** would work if you were sorting a list of text like names.

Sorting on lines that have a possibility of multiple sort keys is a little more difficult. The sort key chosen determines the order in which a list will be sorted. The first key is the first sort, the second key is the secondary sort and so forth. One of the important considerations in defining a key is whether the multiple lists are separated by spaces or tabs. In ordinary text one line is considered a **Field**. However, if that line contains tabs or indents, that line now becomes more than one field. Two tabs together create one field. Fields are divided into words. If spaces are used instead of tabs or indents, the line is then considered to be divided into **Words** instead of fields. Here is an example of a multiple key sort. Before any sort is performed the data appears as shown in Figure 5.

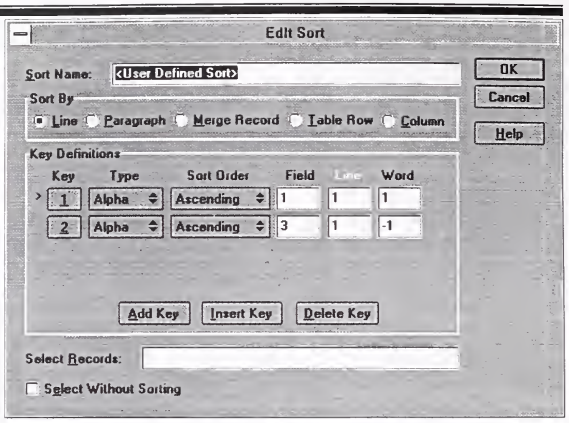


Figure 4: WordPerfect "Edit Sort" Window

The sort selection shown in Figure 4 will sort on the key designated by the first list, zip00X and then on the second name (the character's first name) in the second list. The lists are separated by tabs with two tabs between the first and second lists.

After this sort is invoked the data appears as shown in Figure 6.

The example of an unusual sort on the first name of the character is given because it uses the -1 key definition. A -1 needs to be used whenever you want to command the sort feature to count words from the right rather than from the left within the field.

If a first name sort is what you need to do, be aware that you may need to treat your text differently if the list contains names of people who use their first and

zip004	Mouse, Minnie	478-2858	isd/helena
zip002	Howdy, Doody	444-6766	dphhs/wolf creek
zip003	Wonder, Woman	555-2245	dli/winslow
zip007	Dog, Deputy	388-4544	deq/aqd
zip007	Bird, Tweety	444-4444	isd/pers
zip004	Mouse, Mick	444-2858	fwp/adm
zip007	Bond, James	237-5464	jus/mhp

Figure 5: Data Before Sort

zip002	Howdy, Doody	444-6766	dphhs/wolf creek
zip003	Wonder, Woman	555-2245	dli/winslow
zip004	Mouse, Mick	444-2858	fwp/adm
zip004	Mouse, Minnie	478-2858	isd/helena
zip007	Dog, Deputy	388-4544	deq/aqd
zip007	Bond, James	237-5464	jus/mhp
zip007	Bird, Tweety	444-4444	isd/pers

Figure 6: Data After Sort

middle names. In this example, if James Bond's middle name were Anthony and the list appeared as Bond, James Anthony the key defined with word -1 would sort on Anthony not James because Anthony would be the first word to the left within the field. To avoid this insert a **Ctrl+Space Bar** before Anthony telling the sort to skip over to the item preceding it.

I use names as an example but the two word condition could exist in many situations within lists.

Try a couple of simple sorts. Next month we will examine how to define complex sorts. If you have questions on sorting or any other WordPerfect feature call Candace Rutledge (444-2858) from End User Systems Support.

LOTUS APPROACH

Adding First, Previous, Next and Last Record Buttons in Approach

Each of these buttons has an Approach macro associated with it. When you click on the button the associated macro will run.

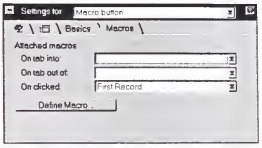


Figure 7: Approach "Button Properties" Box

Go into **Design** in Approach and add a button to your form. You do this by selecting the **Button** symbol on the **Drawing Tools** floating menu. Place your button where you wish. Choose the **Macros** tab on the **Button Properties** box for the button object. Choose **Define Macro**. Choose **New**.

In the macro creation screen under **Command**, click on the down arrow after the **View** command.

Choose **Records** from the pop-up window, then click on the **radio button** which says **Go to: First Record**. You can go up to the top and name your macro, i.e. **First_Record**. Choose **OK** and then choose **Done**. You will be back to the property sheet for the button. Click on the **On clicked:** selection and choose your **First_Record** macro. The macro is then assigned to the button. To place the << symbol on the button choose **Basics** on the property sheet for the button and change the **Button text:** to << .

Repeat these same steps for the other buttons substituting:
Go to: Previous Record. You can go up to the top and name your macro, i.e. **Previous_Record**. **Go to: Next Record**. You can go up to the top and name your macro, i.e. **Next_Record**. **Go to: Last Record**. You can go up to the top and name your macro, i.e. **Last_Record**.

You now have a set of buttons which will perform the functions of **First**, **Previous**, **Next**, and **Last Record GOTOs**. You can cut and paste these buttons between the various screens of your application and the associated macros will still function. If you wish to make the buttons into a button group (a button group is a set of objects grouped together into one object, however, they still function as four separate buttons), then select all of the buttons, using a **Shift-select** or a **Rectangle select**, and then choose **Object, Group**.

As always, if you have any questions about Lotus Approach, Lotus Freelance, or Lotus 1-2-3, contact Brian Divine (444-2791) from End User Systems Support.

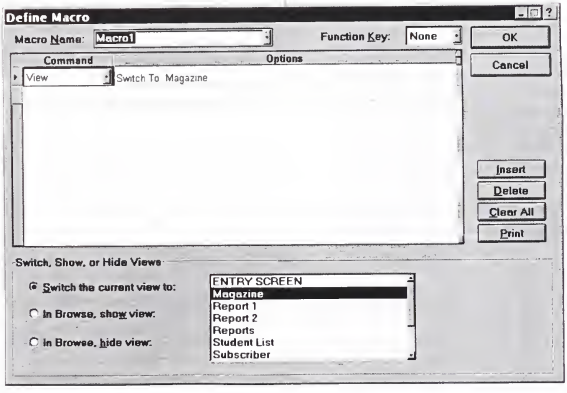


Figure 8: Approach "Define Macro" Dialog Box

How To Blend Backgrounds and Objects In Text

Here's a CorelDRAW! tip that's as much fun as a barrel of monkeys. All you need is an idea, an object and some text. To produce an effect like the graphic above, create a text string of artistic text, such as the word "MONKEYS." Set the font and size as you wish. Feel free to select the text and object and stretch it for effect.

Next, click on **Tools** and then **Symbols** and from the **Animals1** symbols menu, drag out a monkey, or any other symbol you wish. Fill the symbol with a solid color. Use the **Arrange, Order** command to place the symbol behind your text.

Next, drag the symbol to the starting point of the text (usually the bottom left—at the bottom of the M in this example). Copy the symbol and drag the copy to the ending point of the text (usually the top right—the top edge of the S in this example).

Now, click-select one of the symbols. Then shift-click to select the second symbol and in the **Effects** menu, select **Blend**. At the bottom of the first **Blend** dialog box are three buttons, for new **Start**, new **End** and **Path**. Click on the right **Path** button and select **"Add NEW Path"**. Select the text with the arrow cursor that appears. You can choose any number of blend steps, in this case 50 was chosen. Suddenly, your text is alone in a crowd.

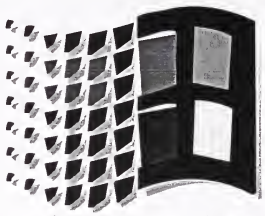
The Balloon illustration was done in exactly the same manner as Monkeys, except instead of a symbol, a circle with a radial fountain fill was used. The circle was placed at the base of the "B" in balloon. Then the circle was copied and the copy was placed at the end tip of the "N". While the copy was selected, the fountain fill was modified to a radial blue.

Then the two circles were click selected, the text string "BALLOON" was selected as the new path, and 100 steps was chosen.

The coloration of the face text was simply using a custom fountain fill as the text color.

When something a little more subtle is called for, you can use this effect with a small number of steps to provide a minimum of background noise. To give the illusion of randomness of size, for this blend the "ROTATE" box was selected in the blend dialog box.

Stay tuned in next month... Same COREL Channel... Same COREL time... For more exciting Corel Graphics news. For more information contact Jerry Kozak (444-2907) from End User Systems Support.



WINDOWS FREEBIES!

More Windows Freebies

PicAlbum (VERSION 1) and SCInvoke (VERSION 1)

Copyright © 1995 Ziff Davis Publishing Company

Two more Windows free utilities, courtesy of PC Magazine, are PicAlbum and SCInvoke. **PicAlbum** finds all the bitmaps on your hard disk, displays them, and lets you organize them in picture albums. The bitmaps are not actually moved; the albums use references to the bitmaps on your disk. The bitmap file types PicAlbum supports are .BMP, .DIB, .PCX, .GIF, TIFF, and Targa. PicAlbum is a 16-bit Windows application that runs compatibly under Windows 3.1 or Windows 95. Screen savers are useful for password-protecting your computer—the trick is getting them to invoke when you want them to. **SCInvoke** presents a very small dialog box that's almost entirely covered by a single button. When you push the button, your screen saver is invoked immediately. When the dialog box is active (the caption bar is highlighted), the screen saver is prevented from starting up. Following are excerpts from the PicAlbum and SCInvoke readme files.

To install **PicAlbum**, copy all its program files to a directory on your

hard disk, then create an icon for PicAlbum in the folder of your choice. To create an album, click on the leftmost button above the Albums list. A dialog box will prompt you for the name. Next, select which directories to search for bitmaps by clicking on the leftmost button above the Directories list box. This will bring up the Bitmap Directories dialog box.

When you have finished building your Directories to Scan list and have checked the bitmap types you want to include, click the OK button to return to the main window. The directories you selected will appear in the Directories list box in the lower-left quadrant. To begin scanning, click the right-arrow button above the Directories list box. When scanning is complete, all the bitmaps in the selected directories of the types you specified will appear in the Directory Bitmaps list box in the lower-right quadrant.

You can review the bitmaps by scrolling down the list. A thumbnail of the highlighted bitmap file will appear to the right of the list box. To get a better look, double-click on the thumbnail. When you see a bitmap that you want to place in an album, highlight the album, then highlight the bitmap(s) and click the up-arrow above the Directory Bitmaps list box. You can also use drag-and-drop.

To install **SCInvoke**, simply copy the file SCINVOKE.EXE to a directory on your hard disk and create an icon for it in your shell. SCInvoke works under Windows 3.1, Windows 95, and Window NT. You may want to place the SCInvoke icon in your Startup group.

The first time you run SCInvoke, it will put its dialog box right in the middle of the screen. You can drag it anywhere you like by clicking on the caption bar and moving the mouse. In addition, you can drag SCInvoke by clicking on any area of the dialog box other than the Invoke button. This is convenient if you want to push SCInvoke almost completely off the screen, with just a few pixels of an edge or a corner showing. Click on an edge outside the button and SCInvoke becomes active, preventing the screen saver from invoking.

SCInvoke's options are available from its System menu. The Invoke Screen Saver menu option does the same thing as the Invoke button on the dialog box. This lets you run SCInvoke minimized and still start your screen saver on demand. The Always on Top option causes SCInvoke to float above other windows, even when it's not active. The Save Settings option stores SCInvoke's window position. If you've pushed SCInvoke way off the screen and want to access its System menu, click on any part of its window and then press **Alt-Spacebar**.

"Two more Windows free utilities, courtesy of PC Magazine, are PicAlbum and SCInvoke. PicAlbum finds all the bitmaps on your hard disk, displays them, and lets you organize them in picture albums. ... Screen savers are useful for password-protecting your computer—the trick is getting them to invoke when you want them to. SCInvoke presents a very small dialog box that's almost entirely covered by a single button. When you push the button, your screen saver is invoked immediately."

If you would like a copy of PicAlbum or SCInvoke, the necessary files are available on ISD's Value Added Server under \GUEST\WINDOWS\WINADDON\PICALB and \GUEST\WINDOWS\WINADDON\SCINVOKE. You can also contact Denny Knapp (via ZIP!, via phone at 444-2072, or via the Internet at **dknapp@mt.gov**) from End User Systems Support.

Term Contract Status

ComputerLand of Helena

New Product Announcement:
IBM PC Server 704—Four-Way SMP Pentium Pro Server with Related Options

Your heavy load, mission critical, transaction processing applications can now be handled cost-effectively with the new PC Server 704 with a uniprocessor or up to four-way 166MHz Pentium Pro processors. Two fault tolerant models are offered:

- A non-array model contains a 166MHz Pentium Pro uniprocessor with dedicated 512KB L2 cache and dual SCSI-2 fast/wide controllers mirrored to two hot-swap hard disk drives.
- An array model is configured with dual 166MHz Pentium Pro symmetrical multiprocessors (SMP) with two dedicated 512KB L2 caches and a PCI RAID adapter connected to four hot-swap hard disk drives.

The PC Server 704 is packed with high-performance, high-availability and scalability features required for today's "must have it now" enterprise. These servers not only provide the data quickly for your present applications, but can grow as your business needs

increase for more transactions per second and larger data storage.

PC Server 704 systems feature ECC memory, RAID, multiprocessors, redundant cooling, and 12 hot-swap hard disk drive bays. In addition, PC Server 704 contains PC SystemView to help manage your server and network clients.

A full three-year, on-site limited warranty, plus PC HelpWare and PC Server Start Up Support are included.

Expandability Features

The PC Server 704 is housed in a cabinet-styled mechanical package designed for efficient cooling, robust card configurations, and excellent data storage capacity.

- Seventeen device bays are available for internal data storage. Large capacity configurations can be achieved inside this mechanical package that supports up to 12, 3.5-inch, half-high, hot-swap hard drives, plus a 4X CD-ROM, 1.44MB floppy diskette drive, and three 5.25-inch, half-high bays intended for removable media devices such as internal tape backup or CD-ROM. Each of the open hot-swap bays contains a hot-swap tray ready for upgrading with a 2.14GB SCSI-2 Fast/Wide Hard Disk Drive.
- PC Server 704 models contain 10 adapter slots, six PCI and four EISA. All slots support 32-bit, busmaster cards.
- Two Adaptec 7870 compatible SCSI Fast/Wide controllers are integrated on the system board.
- Two standard 420 watt power supplies provide power to support full system configurations, while an additional 420 watt redundant power supply option is available for mission-critical applications.

Systems Management

All PC Server 704 systems feature PC SystemView, a comprehensive systems management tool using a graphical interface, which is contained on a CD for installation convenience. PC SystemView v4.0 allows the LAN administrator to monitor and manage servers from a workstation.

The remote server management provided by PC SystemView greatly improves the LAN administrator's productivity and remote LAN management capability. This saves money and time and contributes to lower network operating costs, less travel to remote sites, reduced downtime, and much better overall control through active monitoring, fault prevention, and faster problem resolution.

Start Up Support/Ease of Use

The PC Server 704 comes with IBM's "PC Server Start Up Support" that provides additional HelpWare coverage during the first 90 days from installation on various devices and adapters from IBM and non-IBM vendors. Call the HelpCenter at 800/772-2227 to take advantage of this offering.

For more information, call Mike Price (443-3200) from ComputerLand of Helena.

New TCT Video Courses Available from ISD

ISD has two new additions to its TCT Video Library. They are *Advancements in LAN Technology* and *WAN Developments and the Internet*. Another one, which will be available soon is *Cisco Router Configuration*. Following is a brief description of these classes.

Advancements in LAN Technology

The purpose of this course is to present students with a snapshot of internetworking as it exists today. It explores recent developments in the local and campus areas that are helping networks move faster and manage communications more efficiently. Topics include: Switched Ethernet, Implementation of Switched Ethernet and Fast Ethernet, Introduction to ATM, and Advancements in Token Ring. This course is designed for persons involved in networking and who need an overview of new technologies associated with Local Area Networks. The course includes a videotape, student workbook, technical notes and glossary. (1 hour)

WAN Developments and the Internet

The wide area network has become the lifeline of today's companies, allowing them to instantly transmit data from desktop to desktop, worldwide. This course will discuss the recent developments in the wide area that are helping networks move faster and be less expensive. Topics include: New Router Developments, Remote Access, The Internet, and Wide Area Protocols. This course is designed for persons involved in networking and who need an overview of new technologies associated with Wide Area Networks. The course includes a videotape, student workbook, technical notes and glossary. (1 hour, 20 min.)

Cisco Router Configuration

This hands-on course will enable a student to configure a Cisco router including protocols such as IP, IPX, DEC, Appletalk and others. The combination of video, workbook and CD-ROM will take 1 to 1.5 days to complete (depending on student's prior technical level). The videotapes cover concepts of internetworking, Cisco

"TCT courseware can be used to educate students, as a prerequisite before sending a student to a seminar or class, or as a supplement to in-house training. Please see the December 1995 issue of ISD News & Views for a complete listing of other courses provided by TCT Technical Training that are available for checkout from ISD."

Routers, the Cisco IOS and the various protocols used by the routers. The workbook will contain exercises and tests covering the content of the videotapes. The workbook will also contain documented hands-on procedures for configuring Cisco routers, glossary of terms and acronyms, and technical notes. The CD-ROM will give the student the ability to practice with the Cisco Internetworking Operating System (CIOS) (the command-line interface used to configure nearly all Cisco products). The simulation covers over 50 commands and their associated parameters. Topics include: Internetworking Operating System (IOS) Concepts and Configuring the Router. Prerequisites to this course are an understanding of communications (OSI Model, etc.) and a knowledge of IP addressing (Address, Subnet mask, etc.). These can be acquired through other courses provided by TCT.

About TCT Technical Training

TCT Technical Training, Inc. has been developing video courseware in the field of LAN, WAN and Telecommunications for over 12 years. Today, they are considered by many as the industry leader with one of the largest up-to-date collections of courses. TCT courseware can be used to educate students, as a prerequisite before sending a student to a seminar or class, or as a supplement to in-house training. Please see the December 1995 issue of *ISD News & Views* for a complete listing of other courses provided by TCT Technical Training that are available for checkout from ISD.

ISD has already received the first two courses, and are expecting the Cisco Router Configuration course at any time. For more information, please call Irv Vavruska (444-6870), or to check out these courses for a period of one week or longer, please call Amanda Christen (444-2700), both from Customer Relations.

Suggestions

We are constantly searching for new ideas that could enhance *ISD News & Views*. Perhaps there are subjects you would like to see covered in future articles, or maybe you just wish to share comments on *ISD News & Views*. We would like to hear from you.

Our goal is to present a vehicle, which provides information of common interest, to all agencies within state government. Please share with us any ideas you have that will enable us to keep pace in an ever changing environment. To share your ideas, please contact the editors of *ISD News & Views*.

ISD Information Services Division

Training Calendar

This schedule has been assembled by the Helena College of Technology of The University of Montana. If you have any questions about enrollment, please call 444-6821.

All classes will be held at the Helena College of Technology, Room 211, at 1115 N. Roberts, unless another location is specified. Please note that these costs are subject to change each July 1.

To enroll in a class, **you must send or deadhead an enrollment application** to the State Training Center, HCT, Helena, MT 59601. If you have questions about enrollment, please call 444-6821. *Once you enroll in a class, the full fee will be charged UNLESS you cancel at least three business days before the first day of class.* HCT is also willing to schedule specific classes by request from state agencies.

	DATES	COST	LENGTH
Data Base Classes			
Intro. To Oracle	June 3, 4, 5	255.00	3
Intro. To Oracle	July 1, 2, 3	255.00	3
Oracle Forms, Prereq. Intro. to Oracle	May 28, 29, 30	255.00	3
Oracle Forms, Prereq. Intro. to Oracle	June 10, 11, 12	255.00	3
Oracle Forms, Prereq. Intro. to Oracle	July 29, 30, 31	255.00	3
Oracle End User Tools, Prereq. Intro. to Windows	June 24	85.00	1
Oracle End User Tools, Prereq. Intro. to Windows	July 9	85.00	1
Oracle Reports, Prereq. Intro. to Oracle	June 25, 26, 27	255.00	3
Approach, Prereq. Intro. to Windows	May 7	85.00	1
Approach, Prereq. Intro. to Windows	June 13	85.00	1
Approach, Prereq. Intro. to Windows	July 30	85.00	1
Data Network/Mainframe Classes			
Introduction to Novell	May 14, 15	170.00	2
Introduction to Culprit	July 9, 10	170.00	2
Microcomputer Classes			
Introduction to Windows	May 3	85.00	1
Introduction to Windows	June 3 or 4 or 5 or 6 or 7	85.00	1
Introduction to Windows	July 8	85.00	1
ZIP!Office, Prereq. Intro. to Windows	June 24 or 25 or 26 or 27	free	1/3
ZIP!Office, Prereq. Intro. to Windows	July 22	free	1/3
Word Processing Classes			
WordPerfect 6.1 for Windows Prereq. Intro to Windows	May 16, 17	170.00	2
WordPerfect 6.1 for Windows Prereq. Intro to Windows	July 15 or 16 or 17 or 18 or 19	170.00	2
WordPerfect 6.1 Conv. Windows Prereq. Intro to Windows, WordPerfect	June 13	85.00	1
WordPerfect 6.1 Macros Prereq. WordPerfect 6.1 for Windows	May 21	42.50	½
Spreadsheet Classes			
Lotus for Windows	May 22, 23	170.00	2
Lotus for Windows	July 1, 2	170.00	2
Lotus Conversion for Windows	June 20	85.00	1

Prerequisites may be met with consent of Instructor

The Helena College of Technology makes reasonable accommodations for any known disability that may interfere with a person's ability to participate in training. Persons needing an accommodation must notify the College no later than two weeks before the date of training to allow adequate time to make needed arrangements. To make your request known, call 444-6821.

ISD Class Enrollment Application

COMPLETE THIS APPLICATION **IN FULL** AND RETURN
IT **AT LEAST ONE WEEK PRIOR** TO THE FIRST DAY OF CLASS

COURSE DATA

Course Requested: _____

Date Offered: _____

STUDENT DATA

Name: _____

Soc. Sec. Number (for P/P/P): _____

Agency & Division: _____

Mailing Address: _____

_____

Phone: _____

How have you met the required prerequisites for this course? Explain, giving the class(es) taken, tutorial(s) completed, and/or experience.

_____

_____

_____

BILLING INFORMATION/AUTHORIZATION MANDATORY

User ID: _ _ _ _ _ _ Agency #: _ _ _ _

Authorized Signature: _____

FULL CLASS FEE WILL BE BILLED TO THE REGISTRANT UNLESS CANCELLATION IS MADE THREE BUSINESS DAYS BEFORE THE START DATE OF THE CLASS.

DEADHEAD COMPLETED FORM TO:
COMPUTER TRAINING CENTER
HELENA COLLEGE OF TECHNOLOGY
OF THE UNIVERSITY OF MONTANA
PHONE 444-6800 FAX 444-6892

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Published By...

ISD News & Views is published monthly by the Information Services Division (ISD), Department of Administration, Room 229, Mitchell Building, Helena, MT 59620, 406/444-2700, FAX 406/444-2701.

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